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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/404,826	09/24/1999	MICHAEL J. HAWTHORNE	509/35644	8826

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EXAMINER

KISS, ERIC B

ART UNIT	PAPER NUMBER
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2122

DATE MAILED: 04/05/2004

27

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/404,826

Applicant(s)

HAWTHORNE ET AL.

Examiner

Eric B. Kiss

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 January 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7,9,10,12-21 and 46-49 is/are pending in the application.
- 4a) Of the above claim(s) 12-14 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7,9,10,15-21 and 46-49 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 August 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on January 13, 2004, has been entered.

2. Claims 1-7, 9, 10, 12-21 and 46-49 are pending.

3. Claims 12-14 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim (see Response to Arguments and the rejection(s) of claim 1 below).

Response to Arguments

4. Applicant's arguments filed January 13, 2004, have been fully considered but they are not persuasive.

5. In response to Applicant's arguments on pp. 3-7, the Examiner respectfully disagrees with Applicant's characterization of the *Neeson et al.* reference. First, the cited disclosure, "...in ABNS, communications with locomotives is initiated through the base stations which are in contact with mobile communications packages (MCP) on-board the locomotives," (see col. 2, lines 5-7) merely states that communication is **initiated through** the base stations, and not **initiated by** the base stations, as Applicant has apparently interpreted the passage. The implication of this disclosure is that the system does not communicate directly with the locomotives, but rather uses the base stations as intermediate nodes. Therefore, the Examiner asserts that the interpretation applied in the previous Office action does **not** "run directly contrary to all of the expressed disclosures of Neeson, et al."

Further, with regard to Applicant's interpretation of the disclosure in col. 5, lines 16-32 of *Neeson et al.*, the Examiner asserts that the half-duplex nature of the MCP restricts the MCP in that it cannot simultaneously receive and transmit messages (as expressly disclosed in the above-cited section of *Neeson et al.*). In response, the MCP had been designed so that it would not remain stuck in a transmit-only mode, repeatedly attempting to send data packets while the locomotive is out of range. This was done (as disclosed by *Neeson et al.*) to prevent a possible situation in which the continuously-transmitting MCP could miss important emergency information from the dispatcher. The cited section of the *Neeson et al.* reference does not, as Applicant suggests, disclose that the ground network must initiate communication. Determining that a base station is out of range is not the same thing as waiting for a base station to initiate communication. Rather, the system of *Neeson et al.* is an event-driven system that responds to

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such events as the MCP losing ground contact or exiting the coverage area (corresponding to an ALERTS_EVENT value of LOST_CONTACT) and the MCP regaining ground contact or entering coverage (corresponding to an ALERTS_EVENT value of REG_CONTACT). Upon a LOST_CONTACT event, the system state (ALERT_STATE) changes to one of OOC_IDLE, OOC_CHG_PEND, and OOC_RPT_OUTSTANDING (see Fig. 4), and the appropriate state-dependent procedures (beginning with "S_") are called (see col. 14, line 10, through col. 15, line 34). Upon a REG_CONTACT event, the system state changes to one of CHECK_TABLE, RPT_OUT, and CHG_PEND_RPT_OUT (see Fig. 4).

Neeson et al. discloses a pair of frequencies being used for communications between base stations and the locomotive MCP. One frequency is used for transmissions from the base station to the locomotive, and another is used for transmissions from the locomotive to the base station (see col. 5, lines 23-27). The locomotive must initiate communication on the base station's receiving frequency because the base station does not transmit data at this frequency and therefore, cannot initiate such communication.

The Examiner notes that, even if Applicant's characterization of the *Neeson et al.* system were correct, *Neeson et al.* still meets the limitations recited in the claims. If a base station initiates communication with a locomotive MCP, then the locomotive must receive, process, and respond to such initiation. In other words, the initial data packet(s) transmitted by the base station must be understood by the MCP as being from a base station within range (otherwise such communication would not be possible/successful), and further, the MCP must acknowledge such initiating with an appropriate response, *i.e.*, the MCP must carry out its own communication initiating procedures to enable communication to take place with the base station. Without

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providing this basic functionality, the prescribed communication system would not be able to exchange data between the base station and the locomotive MCP. Communication must be established on both ends for the system to function.

6. Further evidence supporting the Examiner's interpretation of the *Neeson et al.* reference can be found in David C. Coll, et al., (The Communications System Architecture of the North American Advanced Train Control System," August 1990, and Hamid R. Sharif and Edward L. Furman, "Analytical Model for ATCS Inbound RF Channel Throughput," 1991, which describe details of the communication interfaces within the Advanced Train Control System (ATCS), on which *Neeson et al.* relies (see, for example, *Neeson et al.*, col. 1, lines 63-66; and col. 22, lines 55-59).

Claim Rejections - 35 USC § 112

7. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

8. Claims 1-7, 9, 10, 15-21 and 46-49 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled

in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Applicant's amendments to claims 1 and 10, replacing "establishing" with "initiating"/"initiating from" do not appear to be directly supported by the originally-filed specification. In particular, the relevant portions of the specification (p. 8, line 19, through p. 9, line 12) discuss **establishing** wireless communication but do not discuss **initiating from onboard the locomotive** such wireless communication apart from the general establishment of such communication. However, despite this addition of new matter, Applicant's new limitations are addressed below.

Claim Rejections - 35 USC § 102

9. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

10. Claims 1-3, 5-7, 9, 10, and 15-19 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 5,786,998 to Neeson et al.

As per claim 1, *Neeson et al.* discloses collecting event recorder data, train performance data and track data from onboard in files on the on-board computer (see column 1, line 51 through column 2, line 4; and column 8, lines 11-24); determining onboard if a remote station is within communication range (see column 5, lines 16-32; and column 7, line 63 through column

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8, line 3); and initiating from onboard wireless communication between an on-board computer (field unit) and a remote station (base station; see column 7, lines 29-47). *Neeson et al.* discloses a pair of frequencies being used for communications between base stations and the locomotive MCP. One frequency is used for transmissions from the base station to the locomotive, and another is used for transmissions from the locomotive to the base station (see col. 5, lines 23-27). The locomotive must initiate communication on the base station's receiving frequency because the base station does not transmit data at this frequency and therefore, cannot initiate such communication. *Neeson et al.* further disclose determining onboard which of the files are new since last transmission, and transferring the new files to the remote station (see column 5, lines 1-15).

As per claims 2 and 3, *Neeson et al.* discloses determining whether a remote station has updates to be transferred and transferring the updates, including software updates (configuration changes) to the on-board computer (see column 19, lines 49-67).

As per claim 5, *Neeson et al.* further discloses determining the location of the train and the location of the next remote station (receiving base station; see column 7, line 63 through column 8, line 3).

As per claim 6, *Neeson et al.* further discloses transmitting a wireless query and monitoring for a response (loss of mobile contact/acquired mobiles; see column 21, lines 42-48).

As per claim 7, *Neeson et al.* further discloses resuming file transfers during subsequent communication sessions after an interruption of wireless communication (see column 14, line 10 through column 15, line 34).

As per claim 9, *Neeson et al. further* discloses files including data from plural event recorders (intelligent devices) that transfer data to the on-board computer (processing device; see column 4, lines 44-57).

As per claim 10, *Neeson et al. further* discloses the plural event recorders each connected to a respective on-board computer (intelligent devices have computer processing – “receive and understand” capabilities; see column 2, lines 5-27), initiating wireless communication between the on-board computers (intelligent devices) and the remote station (intelligent devices communicate to the base stations via the processing device), and transferring event recorder data from each of the on-board computers to the remote station (see column 4, line 33 through column 5, line 15).

As per claim 15, *Neeson et al. further* discloses establishing communication between a remote station (base station) and a home base station (front end processor), and determining what files need to be transferred and transferring the files (see column 8, lines 11-18 and lines 40-44).

As per claim 16, *Neeson et al. further* discloses transferring operational data for the onboard computer (traffic control information; see column 8, lines 18-24) from the home base station (front end processor) to the remote station (base station).

As per claims 17 and 18, *Neeson et al. further* discloses transferring operation information of the remote station, including locomotives contacted (locomotive ID) from the remote station (base station) to the home base station (front end processor; see column 12, lines 50-67).

As per claim 19, *Neeson et al.* further discloses establishing communication between the remote station (base station) and the home base station (front end processor) when requested by a user or according to a schedule (see column 10, lines 19-24).

Claim Rejections - 35 USC § 103

11. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

12. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Neeson as applied to claims 1 and 22 above, and further in view of U.S. Patent No. 5,848,064 to Cowan.

As per claim 4, Neeson teaches transferring updates to the on-board computer (see column 19, lines 49-67) but fails to teach comparing the version of a file in the on-board computer to the version of a file in the remote station to affect what is transferred. However, Cowan teaches changing the operating software of mobile terminals by detecting a change in a software version identifier in a remote station (host computer) and transferring the change (new version) resulting from the comparison (see column 6, lines 41-51). Therefore, it would have been obvious to one having ordinary skill in the computer art at the time the invention was made to modify the software updating method of Neeson to include the version comparison of Cowan. One would be motivated to do so to ensure that on-board computer's software is kept up-to-date.

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13. Claims 20 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Neeson as applied to claim 1 above, and further in view of U.S. Patent No. 5,420,883 to Swensen et al.

As per claims 20 and 21, Neeson teaches transferring files between an on-board computer and a remote station (base station; see column 8, lines 11-24) but fails to teach transferring files between remote stations. However, Swensen teaches a hierarchical scheme in which remote stations (trackside radios) retransmit received messages to other, different level, remote stations within a subnet (see column 5, line 64 through column 6, line 29 and Figure 12). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the Neeson method to include the retransmitting scheme of Swensen. One would be motivated to do so to allow for contacting a train or remote station where a direct link is not possible.

14. Claims 46-49 are rejected under 35 U.S.C. 103(a) as being unpatentable over Neeson as applied to claim 1 above, and further in view of U.S. Patent No. 5,785,283 to Ehrenberger et al.

As per claims 46 and 47, Neeson teaches transferring data from a remote station to an on-board computer and from an on-board computer to a remote station (base station; see column 8, lines 11-24) but fails to teach transferring track data or displaying track data on the train. However, Ehrenberger teaches transferring track data (wayside defects) from a remote station (wayside system) to an on-board computer (see Figure 1) and displaying the track data on the train (see column 3, lines 9 through 21). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the Neeson method to include transferring track data to the on-board computer and displaying the track data as taught

by Ehrenberger and subsequently transferring the track data to another remote station. One would be motivated to do so to keep the train operator informed of potential hazards in the area and to disseminate the information to other train operators in the system.

As per claim 48, in addition to the teachings applied above, Ehrenberger further suggests other types of track data, including status of a highway crossing analyzer (see column 6, lines 52-59). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify the Neeson method to include track information such as crossing gate position or crossing occupancy status as per the suggestion of Ehrenberger. One would be motivated to do so to communicate a potential highway crossing hazard to the locomotive operator in advance of the train approaching the highway crossing.

As per claim 49, in addition to the teachings applied above, it would have been furthermore obvious to include correlating train performance data with track data, e.g. making a change in speed in response to a detected potential hazard.

Conclusion

15. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

As discussed above, David C. Coll, et al., (The Communications System Architecture of the North American Advanced Train Control System," August 1990 and Hamid R. Sharif and Edward L. Furman, "Analytical Model for ATCS Inbound RF Channel Throughput," 1991, describe details of the communication interfaces within the Advanced Train Control System

(ATCS), on which *Neeson et al.* relies (see, for example, *Neeson et al.*, col. 1, lines 63-66; and col. 22, lines 55-59).

16. Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Eric B. Kiss whose telephone number is (703) 305-7737. The Examiner can normally be reached on Tue. - Fri., 7:30 am - 5:00 pm. The Examiner can also be reached on alternate Mondays.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Tuan Dam, can be reached on (703) 305-4552. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

EBK / EOK
March 25, 2004



ANTONY NGUYEN-BA
PRIMARY EXAMINER